

C&EE 141

Construction Documents Overview

Construction Documents

- Construction documents define the work that is designed by the structural engineer
- Primary means of communication
- Typically define the finished structure, not the methods of construction

Construction Documents

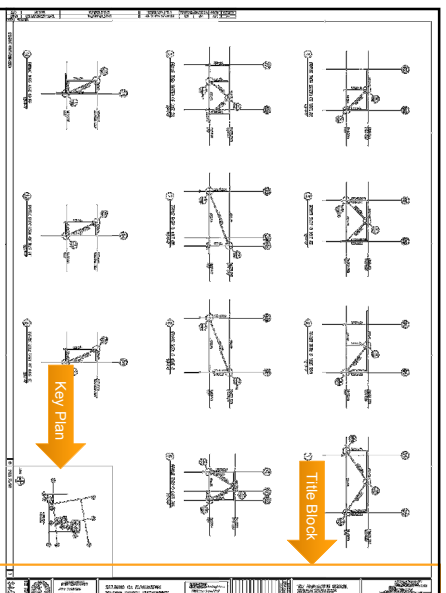
- Drawings
 - Graphical depiction of work
 - Callouts
 - Dimensions
 - Notes
- Specifications
 - Written description of requirements for work
- Calculations are not construction documents
 - They merely justify the design meets the project requirements

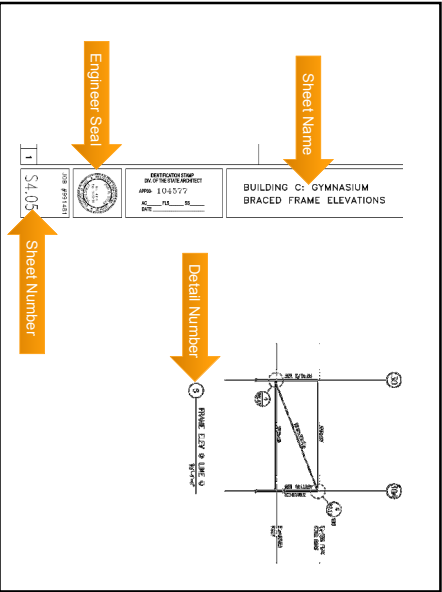
Drawing Overview

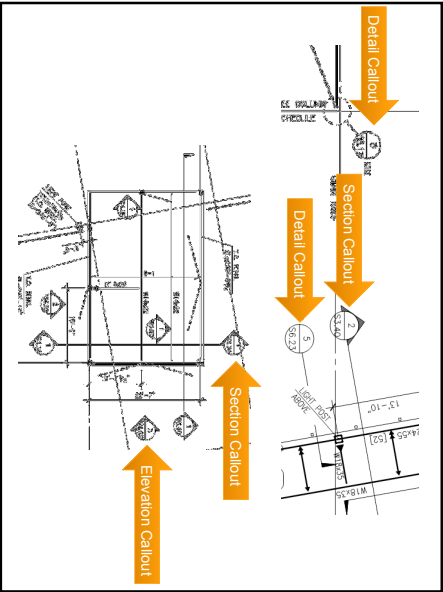
- Common Drawing Elements
- General Notes
- Plans
- Elevations
- Sections
- Column Schedules
- Details

Common Drawing Elements

- Title Block
- Sheet name
- Sheet number
- Detail numbers
- Callouts







General Notes

- Provide general requirements of the project that apply to all sheets in the document
- Code basis
- Loading criteria
- Material specifications
- Limitations of scope, definition of responsibilities
- Limitations or requirements for construction methods
- Testing, inspection and observation requirements

GENERAL INFORMATION		PROJECT INFORMATION		DESIGN INFORMATION	
1. PROJECT NAME	2. PROJECT NUMBER	3. PROJECT LOCATION	4. PROJECT OWNER	5. PROJECT ENGINEER	6. PROJECT DATE
7. PROJECT DESCRIPTION	8. PROJECT SCOPE	9. PROJECT BUDGET	10. PROJECT RISK	11. PROJECT STATUS	12. PROJECT COMMENTS
13. PROJECT PHASES	14. PROJECT DELIVERABLES	15. PROJECT MILESTONES	16. PROJECT RISKS	17. PROJECT ISSUES	18. PROJECT ACTIONS
19. PROJECT CONTACTS	20. PROJECT DOCUMENTS	21. PROJECT TOOLS	22. PROJECT RESOURCES	23. PROJECT PERFORMANCE	24. PROJECT EVALUATION
25. PROJECT SUMMARY	26. PROJECT CONCLUSION	27. PROJECT RECOMMENDATIONS	28. PROJECT LESSONS LEARNED	29. PROJECT NEXT STEPS	30. PROJECT CLOSURE

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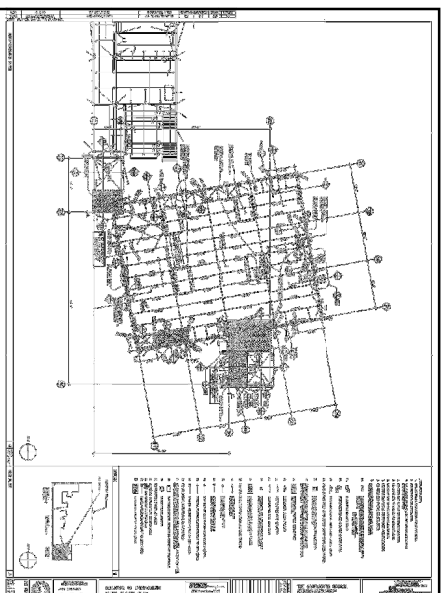
SPECIAL INSPECTIONS

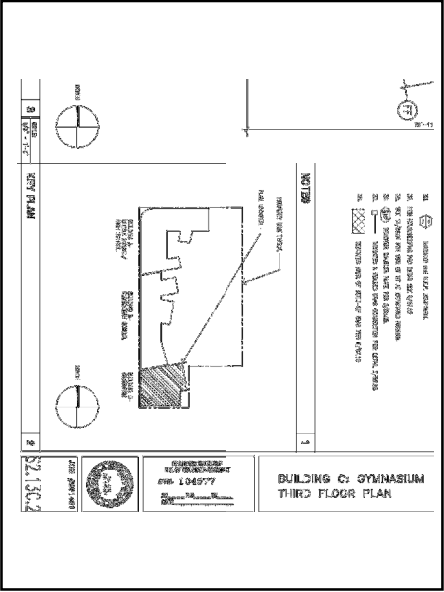
THE FOLLOWING ELEMENTS OF CONSTRUCTION SHALL HAVE CONTINUOUS INSPECTION BY A SPECIAL INSPECTOR APPROVED FOR THAT PURPOSE BY DSA.

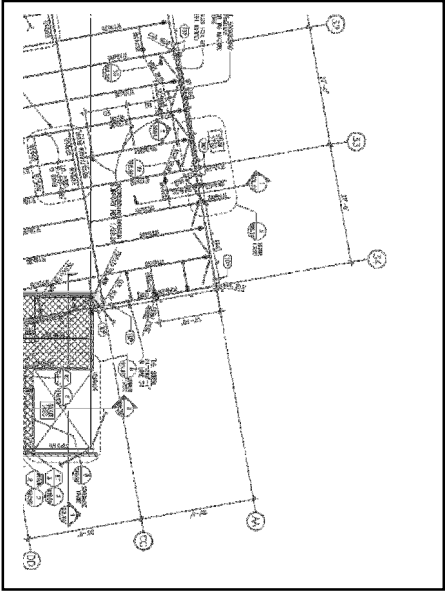
1. CONCRETE.
2. BOLTS INSTALLED IN CONCRETE.
3. ALL STRUCTURAL WELDING, INCLUDING REINFORCING STEEL.
4. PLACING OF REINFORCING STEEL.
5. HIGH STRENGTH BOLTING.
6. STRUCTURAL MASONRY AND JOINTS.
7. SEE GEOTECHNICAL ENGINEER'S REPORT FOR SPECIFIC INSPECTION REQUIREMENTS BY SOILS ENGINEER'S RECOMMENDATION.
8. INSTALLATION OF EXPANSION ANCHORS.
9. INSTALLATION OF METAL DECK AND JOINTED STUDS.
10. ALL SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE ENGINEER'S RECOMMENDATIONS AND THE DESIGN DRAWINGS AND/OR THE PROJECT SPECIFICATIONS.

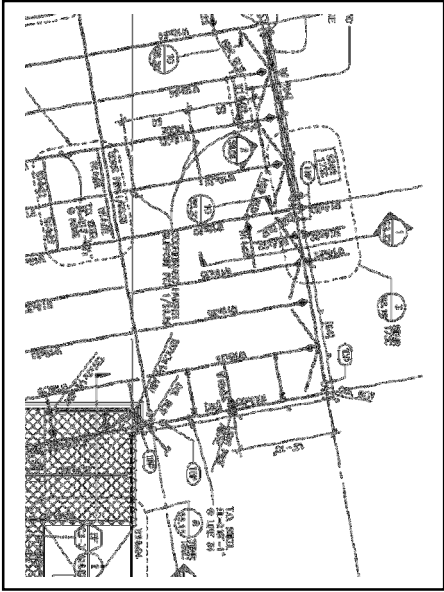
Plans

- Depiction of the structure in “plan” (horizontal view)
 - Horizontal control (grids, north arrow)
 - Horizontal framing (beams, girders, slabs)
 - Foundations
 - Callouts for sections, elevations and details
 - Sheet notes
- Typically one framing plan drawing per floor (unless floors are identical)





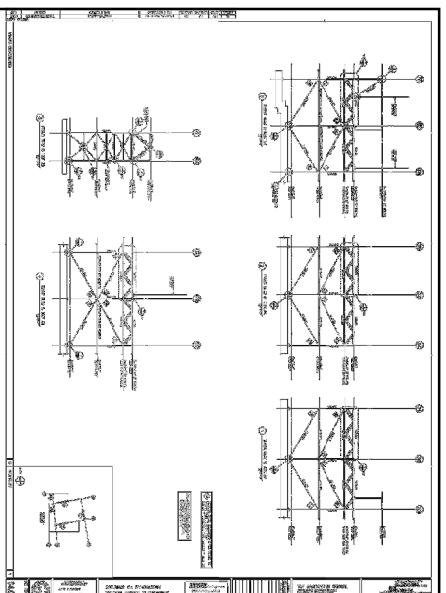


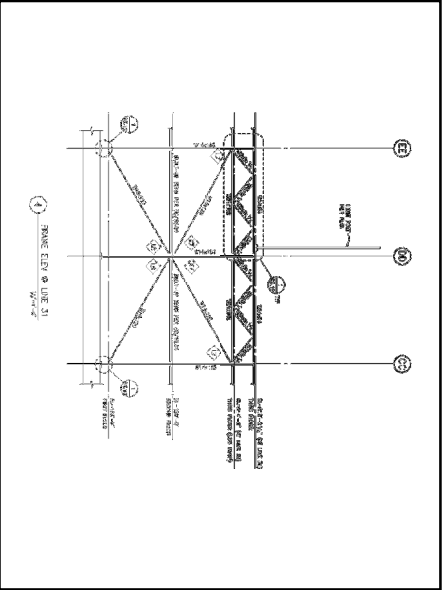


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Elevations

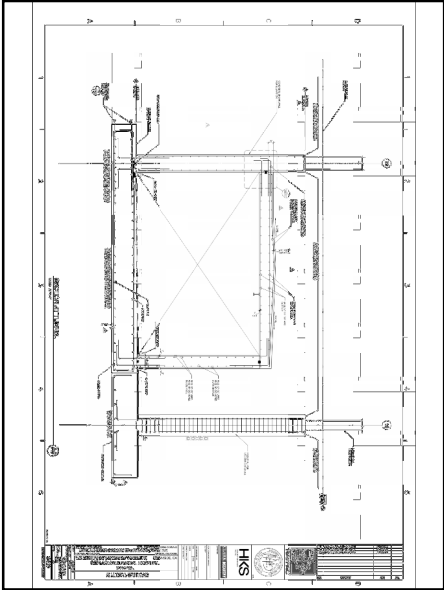
- Depiction of the structure in “elevation” (vertical view)
- Walls, wall reinforcement
- Frames
- Frame connection detail references

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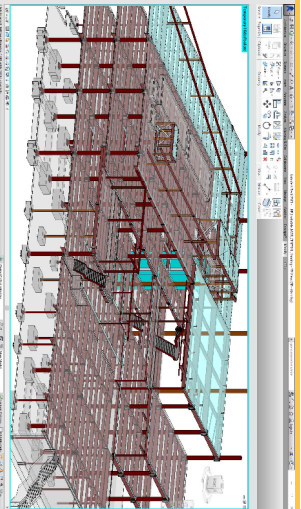


Sections

- Depiction of the structure, or specific elements of the structure, in cross-section
- Building sections
- Wall sections
- Foundation sections
- Detailed sections
- General configuration/arrangements of elements
- Call out steel connection details
- Concrete reinforcement

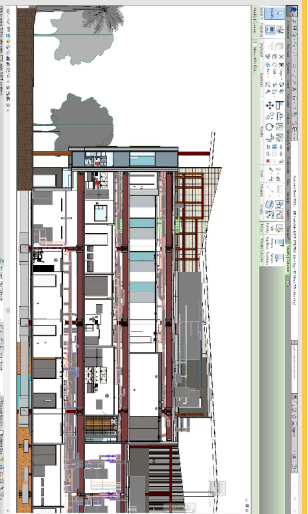


Revit and 3D



UCLA CEE 141 – STRUCTURAL STEEL DESIGN

Revit and 3D



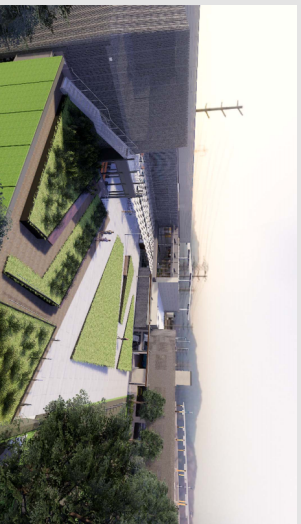
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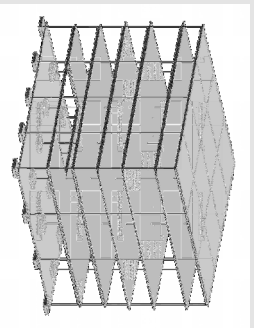


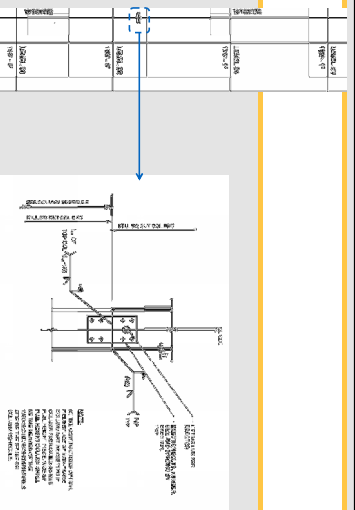
UCLA CEE 141 – STRUCTURAL STEEL DESIGN

Revit and 3D



Class Project





Good Calcs...

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CEE 141 – STRUCTURAL STEEL DESIGN

Bad Calcs...

[illegible]

UCLA
CEE 141 – STRUCTURAL STEEL DESIGN



UCLA CEE 141 – STRUCTURAL STEEL DESIGN

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